

## INTELLIGENCE UPDATE

# Crypto mines are turning into AI factories



Max Smolaks

31 Jul 2025

The pursuit of training ever-larger generative AI models has necessitated the creation of a new class of specialized data centers — facilities that have more in common with high-performance computing (HPC) environments than traditional enterprise IT.

These data centers support very high rack densities (130 kW and above with current Nvidia rack-scale systems), direct-to-chip liquid cooling, and supersized power distribution components. This equipment is deployed at scale, in facilities that consume tens of megawatts. Delivering such dense infrastructure at this scale is not just technically complicated — it often requires doing things that have never been attempted before.

Some of these ultra-dense AI training data centers are being built by well-established cloud providers and their partners — wholesale colocation companies. However, the new class of facility has also attracted a different kind of data center developer: former cryptocurrency miners. Many of the organizations now involved in AI infrastructure — such as Applied Digital, Core Scientific, CoreWeave, Crusoe and IREN — originated as crypto mining ventures.

Some have transformed into neoclouds, leasing GPUs at competitive prices (see [Neoclouds: a cost-effective AI infrastructure alternative](#)). Others operate as wholesale colocation providers, building specialized facilities for hyperscalers, neoclouds, or large AI model developers like OpenAI or Anthropic. Few of them operated traditional data centers before 2020. These operators represent a significant and recent addition to the data center industry — especially in the US.

## A league of their own

Crypto mining facilities differ considerably from traditional data centers. Their primary objective is to house basic servers equipped with either GPUs or ASICs (application-specific integrated circuits), running at near 100% utilization around the clock to process calculations that yield cryptocurrency tokens. The penalties for outages are direct — fewer tokens mean lower profits — but the hardware is generally considered disposable. The business case is driven almost entirely by the cost of power, which accounts for almost all of the operating expenditure.

Many crypto mines do not use traditional server racks. Most lack redundancy in power distribution and cooling equipment, and they have no means of continuing operations in the event of a grid outage: no UPS, no batteries, no generators, no fuel. In some cases, mining equipment is located outdoors, shielded from the rain, but little else.

While crypto miners didn't build traditional data center facilities, they did have two crucial assets: land zoned for industrial use and access to abundant, low-cost power.

Around 2020, some of the largest crypto mining operators began pivoting toward hosting hardware for AI workloads — a shift that became more pronounced following the launch of ChatGPT in late 2022. **Table 1** shows how quickly some of these companies have scaled their AI/HPC operations.

Table 1 The transformation of crypto miners

	Year established	Origins	Claimed AI/HPC capacity in 2025	Valuation/ market cap
Applied Digital (formerly Applied Blockchain)	2021	Colocation for crypto mining	400 MW under construction	\$2.42bn
Core Scientific	2017	Colocation for crypto mining, infrastructure as a service	1.3 GW-plus	\$9bn
CoreWeave (formerly Atlantic Crypto)	2017	Contract crypto mining	1.6 GW	\$56.43bn
Crusoe	2018	Containerized crypto mining powered by waste methane	1.35 GW	\$2.8bn
IREN (formerly Iris Energy)	2018	Crypto mining powered by renewable energy	810 MW, 2.1 GW under construction	\$3.98bn

(Financial and capacity data are accurate as of July 2025.)

To develop data center designs that can accommodate the extreme power and cooling requirements of cutting-edge AI hardware, these companies are turning to engineers and consultants with experience in hyperscale projects. The same applies to construction companies. The resulting facilities are built to industry standards and are concurrently maintainable.

There are three primary reasons why crypto miners were successful in capitalizing on the demand for high-density AI infrastructure:

- These organizations were accustomed to moving quickly, having been born in an industry that had to respond to volatile cryptocurrency pricing, shifting regulations and fast-evolving mining hardware.
- Many were already familiar with GPUs through their use in crypto mining — and some had begun renting them out for research or rendering workloads.
- Their site selection was primarily driven by power availability and cost, rather than

proximity to customers or network hubs.

## Violence of action

Applied Digital, a publicly traded crypto mining operator based in North Dakota, presents an interesting case study. The state is one of the least developed data center markets in the US, with only a few dozen facilities in total.

Applied Digital's campus in Ellendale was established to capitalize on cheap renewable power flowing between local wind farms and Chicago. In 2024, the company removed all mentions of cryptocurrency from its website — despite retaining sizable (100 MW-plus) mining operations. It then announced plans to build a 250 MW AI campus in Ellendale, codenamed Polaris Forge, to be leased by CoreWeave.

The operator expects the first 100 MW data center to be ready for service in the fourth quarter of 2025. The facility will use direct liquid cooling and is designed to support 300 kW-plus rack densities. It is built to be concurrently maintainable, powered by two utility feeds, and will feature N+2 redundancy on most mechanical equipment. To ensure cooling delivery in the event of a power outage, the facility will be equipped with 360,000 gallons (1.36 million liters) of chilled water thermal storage. This will be Applied Digital's first non-crypto facility.

The second building, with a capacity of 150 MW, is expected to be ready in the middle of 2026. It will deploy medium-voltage static UPS systems to improve power distribution efficiency and optimize site layout. The company has several more sites under development.

## Impact on the sector

Do crypto miners have an edge in data center development? What they do have is existing access to power and a higher tolerance for technical and business risk — qualities that enable them to move faster than much of the traditional competition. This willingness to place bets matters in a market that is lacking solid fundamentals: in 2025, capital expenditure on AI infrastructure is outpacing revenue from AI-based products by orders of magnitude. The future of generative AI is still uncertain.

At present, this new category of data center operators appears to be focusing exclusively on the ultra-high-density end of the market and is not competing for traditional colocation customers. For now, they don't need to either, as demand for AI training capacity alone keeps them busy. Still, their presence in the market introduces a new competitive threat to colocation providers that have opted to accommodate extreme densities in their recently built or upcoming facilities.

M&E and IT equipment suppliers have welcomed the new arrivals — not simply because they drive overall demand but because they are new buyers in a market increasingly dominated by a handful of technology behemoths. Some operators will be concerned about supply chain capacity, especially when it comes to large-scale projects: high-density campuses could deplete

the stock of data center equipment such as large generators, UPS systems and transformers.

One of the challenges facing this new category of operators is the evolving nature of AI hardware. Nvidia, for example, intends to start shipping systems that consume more than 500 kW per compute rack by the end of 2027. It is not clear how many data centers being built today will be able to accommodate this level of density.

## The Uptime Intelligence View

The simultaneous pivot by several businesses toward building much more complex facilities is peculiar, yet their arrival will not immediately affect most operators.

While this trend will create business opportunities for a broad swathe of design, consulting and engineering firms, it is also likely to have a negative impact on equipment supply chains, extending lead times for especially large-capacity units.

Much of this group's future success hinges on the success of generative AI in general — and the largest and most compute-hungry models in particular — as a tool for business. However, the facilities they are building are legitimate data centers that will remain valuable even if the infrastructure needs of generative AI are being overestimated.

Other related reports published by Uptime Institute include:

[\*Nvidia's vision for data centers may be a false prophecy\*](#)

## ABOUT THE AUTHOR

---



### Max Smolaks

Max is a Research Analyst at Uptime Institute Intelligence. Mr Smolaks' expertise spans digital infrastructure management software, power and cooling equipment, and regulations and standards. He has 10 years' experience as a technology journalist, reporting on innovation in IT and data center infrastructure.

[msmolaks@uptimeinstitute.com](mailto:msmolaks@uptimeinstitute.com)

## **About Uptime Institute**

Uptime Institute is the Global Digital Infrastructure Authority. Its Tier Standard is the IT industry's most trusted and adopted global standard for the proper design, construction, and operation of data centers – the backbone of the digital economy. For over 25 years, the company has served as the standard for data center reliability, sustainability, and efficiency, providing customers assurance that their digital infrastructure can perform at a level that is consistent with their business needs across a wide array of operating conditions.

With its data center Tier Standard & Certifications, Management & Operations reviews, broad range of related risk and performance assessments, and accredited educational curriculum completed by over 10,000 data center professionals, Uptime Institute has helped thousands of companies, in over 100 countries to optimize critical IT assets while managing costs, resources, and efficiency.